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What is the topic, such as the **novelty**, motivation, utility, or other specific facets defining the desired **focus** of this search? Please include the concepts, synonyms, keywords, acronyms, registry numbers, definitions, structures, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract and pertinent claims.

donning system that measures the force of
donning or measuring anything.

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Searcher: Boade
Searcher Phone: 22541
Searcher Location: STIC-EIC2800, JEF-4B68
Date Searcher Picked Up: 04-08-04
Date Completed: 04-08-04
Searcher Prep/Rev Time: 40
Online Time: 240

Type of Search

Structure (#) _____
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Set	Items	Description
S1	26184402	SENSING OR SENSE OR SENSES OR DETECT? OR SENSOR? OR ASSESS? OR MEASUR? OR MONITOR?
S2	16804455	FORCE? OR POWER? OR ENERG? OR STRENGTH?
S3	134374	DONNING OR PUTTING()ON OR WEARING OR DONS OR DONNING OR D- ONNED OR PUT()ON
S4	46551	GLOVE?
S5	160	S1 AND S2 AND S3 AND S4
S6	10	S1 (3N) S2 (3N)S3 (3N)S4
S7	5	RD (unique items)
S8	1515	S2(3N)S3
S9	2873	S1(3N)S3
S10	2511	DONNING OR DONS OR DONNING OR DONNED
S11	337	S10 AND S4
S12	27	S11 AND S1 AND S2
S13	16	RD (unique items)
S14	14	S13 NOT S7
S15	544804	S1(2N)S2
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S18	10	S17 NOT (S7 OR S14)

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14/9/1 (Item 1 from file: 5)
DIALOG(R) File 5: Biosis Previews(R)
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0011817577 BIOSIS NO.: 199900077237

Inhalation challenge testing of latex-sensitive health care workers and the effectiveness of laminar flow HEPA-filtered helmets in reducing rhinoconjunctival and asthmatic reactions

AUTHOR: Laoprasert Nunthaporn; Swanson Mark C; Jones Richard T; Schroeder Darrell R; Yunginger John W (Reprint)

AUTHOR ADDRESS: Allergic Dis. Res. Lab., 406 Guggenheim Build., Mayo Clin., 200 First St. SW, Rochester, MN 55905, USA**USA

JOURNAL: Journal of Allergy and Clinical Immunology 102 (6 PART 1): p 998-1004 Dec., 1998 1998

MEDIUM: print

ISSN: 0091-6749

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: Background: There are few data relating latex aeroallergen concentrations to biologic responses in latex-sensitized persons. Objectives: We sought to investigate acceptable latex aeroallergen concentrations below which latex-sensitive health care workers do not experience symptoms and to study the effect of high-efficiency particle arrest (HEPA)-filtered laminar flow helmets in preventing latex-induced symptoms. Methods: Under challenge chamber conditions, latex-sensitive health care workers underwent 7 sequential inhalation challenge tests by **donning** and discarding either vinyl **gloves** (challenge 1), low latex-allergen powder-free **gloves** (challenge 2), or high latex-allergen powdered **gloves** (challenges 3 to 7) for up to 1 hour. Volunteers wore a laminar flow helmet during all challenges; HEPA filters in the helmet were in place only during challenges 3 and 4. Flow-volume loops, symptom scores, and latex aeroallergen concentrations were **measured** before and during each test. Results: At 60 minutes, latex aeroallergen concentrations during challenges 3 to 7 (mean, 7600 ng/m³; range, 93 to 54,000 ng/m³) were significantly higher than during challenges 1 or 2 (mean, 65 ng/m³; range, nondetectable to 100 ng/m³) ($P < .001$). During challenges 5 and 6, mean maximum percent falls in FEV₁ (-16% and -11%, respectively) were significantly greater compared with those **measured** during challenges 3 and 4 (-3% and -1%, respectively) ($P = .03$). Mean maximum change from baseline symptom scores during challenges 5 and 6 was significantly higher than that during challenges 3 and 4 ($P = .006$). During challenges with high latex-allergen **gloves**, 4 volunteers had reproducible FEV₁ falls of 20% or greater at cumulative inhaled latex aeroallergen doses ranging from less than 100 ng to 1500 ng. Conclusion: The laminar flow helmets were effective in reducing latex-induced symptoms. Only 1 volunteer exhibited a fall in FEV₁ of 20% or greater after a cumulative inhaled latex aeroallergen dose of less than 100 ng, and no volunteer showed a decline in FEV, after exposure to powder-free low allergen **gloves**.

DESCRIPTORS:

MAJOR CONCEPTS: Allergy--Clinical Immunology, Human Medicine, Medical Sciences

BIOSYSTEMATIC NAMES: Hominidae--Primates, Mammalia, Vertebrata, Chordata, Animalia

ORGANISMS: human (Hominidae)--health care worker, latex sensitive

COMMON TAXONOMIC TERMS: Animals; Chordates; Humans; Mammals; Primates; Vertebrates

METHODS & EQUIPMENT: inhalation challenge testing--diagnostic method;
laminar flow HEPA-filtered helmets--diagnostic method
MISCELLANEOUS TERMS: asthmatic reaction; **forced** expiratory volume;
rhinoconjunctival reaction
CONCEPT CODES:
35500 Allergy
34502 Immunology - General and methods
BIOSYSTEMATIC CODES:
86215 Hominidae

14/9/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0010980885 BIOSIS NO.: 199799614945

**The bionic glove : An electrical stimulator garment that provides
controlled grasp and hand opening in quadriplegia**

AUTHOR: Prochazka Arthur (Reprint); Gauthier Michel; Wieler Marguerite;
Kenwell Zoltan

AUTHOR ADDRESS: Div. Neurosci., 507 HMRC, Univ. Alberta, Edmonton, AB T6G
2S2, Canada**Canada

JOURNAL: Archives of Physical Medicine and Rehabilitation 78 (6): p608-614
1997 1997

ISSN: 0003-9993

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: Objective: This report describes the operation of the Bionic
Glove , a new functional electrical stimulation (FES) device designed to
improve the function of the paralyzed hand after spinal cord injury (SCI)
or stroke. Design: Signals from a **sensor** in the **glove** **detecting**
voluntary wrist movement are used to control FES of muscles either to
produce hand-grasp or to open the hand. When the **glove** is **donned** ,
conductive areas on its inside surface automatically make contact with
self-adhesive electrodes on the skin. Setting and Patients: This report
concerns nine people with SCI who have used the device in their daily
lives for up to a year or more. **Measurements** were made at clinics in
Edmonton, Miami, and Chicago as part of a multicenter clinical trial.
Outcome **Measures** and Results: The mean peak **force** of tenodesis grasp
in the nine subjects increased from 2.6N (passive) to 11.3N (**glove**
active). Active **force** was significantly greater than passive grasp
force even when muscles were fatigued after repetitive grasp-release
cycles. Most manual tasks improved significantly with the use of the
glove , as judged by the number of tasks completed in a minute or the
subjects' qualitative ratings of task difficulty. Conclusion: The Bionic
Glove can provide significant improvement of hand function in people
with C6-C7 SCI.

DESCRIPTORS:

MAJOR CONCEPTS: Methods and Techniques; Nervous System--Neural
Coordination; Neurology--Human Medicine, Medical Sciences

BIOSYSTEMATIC NAMES: Hominidae--Primates, Mammalia, Vertebrata, Chordata,
Animalia

ORGANISMS: human (Hominidae)

COMMON TAXONOMIC TERMS: Animals; Chordates; Humans; Mammals; Primates;
Vertebrates

MISCELLANEOUS TERMS: **BIONIC GLOVE** ; **CONTROLLED GRASP**; **ELECTRICAL
STIMULATOR GARMENT**; **HAND OPENING**; **NERVOUS SYSTEM DISEASE**; **PHYSICAL**

REHABILITATION; QUADRIPLÉGIA; THERAPEUTIC METHOD

CONCEPT CODES:

10511 Biophysics - Bioengineering
12010 Physiology - Exercise and physical therapy
12512 Pathology - Therapy
20501 Nervous system - General and methods
20506 Nervous system - Pathology

BIOSYSTEMATIC CODES:

86215 Hominidae

14/9/3 (Item 1 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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12507063 PMID: 14510282

Ease of donning of new powder-free non-latex and latex double- glove hole puncture indication systems.

Edlich Richard F; Wind Tyler C; Heather Cynthia L; Thacker John G
Plastic Surgical Research Program, University of Virginia Health System,
Charlottesville, Virginia, USA. redlich9@attbi.com

Journal of long-term effects of medical implants (United States) 2003,
13 (2) p91-6, ISSN 1050-6934 Journal Code: 9110830

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Subfile: HEALTH TECHNOLOGY ASSESSMENT

Cornstarch on surgical **gloves** is often used as a detackifying agent and a lubricant to facilitate **glove donning**. During the last century, scientific studies have demonstrated that cornstarch produces tissue injury in literally every part of the body. Because this **glove** lubricant cannot be removed from the **glove**, Dr. David Podell, an ophthalmologic surgeon, and his cousin, Howard Podell, a chemical engineer, devised the first powder-free surgical **glove** that could be **donned** easily. They coated the inner surface of the surgical **glove** with a methacrylate polymer lining that was bonded to the natural rubber latex. This special coating acts as a lubricant to facilitate **donning** with damp, wet, or dry hands. In our earlier experimental studies, we confirmed that these polymer-lined latex **gloves** could be **donned** with either wet or dry hands. More recently, the polymer-coated latex **gloves** were incorporated into a double- **glove** hole puncture indication system that accurately **detected** **glove** holes in the presence of fluid. Because this discovery has been expanded into the development of a non-latex double- **glove** hole puncture indication system, we have expanded our biomechanical performance studies to examine the **glove donning forces** of the latex and non-latex **glove** hole puncture indication systems. The maximum **donning forces** recorded for the non-latex undergloves were significantly lower than those encountered by the same respective sizes of the latex underglove. The **donning forces** of the thin Biogel Super-Sensitive outer **gloves** were remarkably similar to the **donning forces** of the Biogel Indicator undergloves. The thicker Biogel outer **gloves** encountered greater **donning forces** than that noted for the Biogel Super-Sensitive outer **gloves**. The **donning forces** recorded for the non-latex outer **gloves** were remarkably similar to those noted for the latex Biogel outer **gloves**. Because the results of this biomechanical performance study demonstrated that the latex and non-latex double- **glove** hole puncture indication systems can be easily **donned** by surgeons using relatively low **donning forces**, this study provides convincing evidence that these double- **glove** hole puncture indication systems can be used in all surgical procedures.

Tags: Human; Support, Non-U.S. Gov't
Descriptors: Equipment Design; * **Gloves** , Surgical; Biomechanics; Latex;
Needlestick Injuries--prevention and control--PC; Starch
CAS Registry No.: 0 (Latex); 9005-25-8 (Starch)
Record Date Created: 20030926
Record Date Completed: 20031016

14/9/4 (Item 2 from file: 155)
DIALOG(R) File 155:MEDLINE(R)
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12423100 PMID: 12825744

Reducing accidental injuries during surgery.

Edlich Richard F; Wind Tyler C; Hill Lisa G; Thacker John G; McGregor Walter

Plastic Surgery Research Program, University of Virginia Health System, Charlottesville, Virginia, USA. redlich9@attbi.com

Journal of long-term effects of medical implants (United States) 2003, 13 (1) p1-10, ISSN 1050-6934 Journal Code: 9110830

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Subfile: HEALTH TECHNOLOGY ASSESSMENT

Extensive clinical investigations have demonstrated that double- **gloves** and blunt-tipped surgical needles dramatically reduced the risk of accidental injuries during surgery. During the last decade, double- **glove** hole puncture indication systems have been developed that reduce the clinical risk of accidental needlestick injuries as well as **detect** the presence of **glove** hole puncture in the presence of fluids. When the outer **glove** is punctured, the colored underglove becomes apparent through the translucent outer **glove** , necessitating **glove** removal, hand washing, and **donning** of another double- **glove** hole puncture Indicator system. This article presents the first biomechanical performance study that documents the puncture resistance of blunt surgical needles in latex and nonlatex single **gloves** and double- **glove** hole puncture indication systems. The technique for **measuring** **glove** puncture resistance simulates the standard test for material resistance to puncture outlined by the American Society for Testing and Materials. The maximum puncture resistance **force** was **measured** by the compression load cell and recorded in grams with a strip chart recorder. Ten puncture resistance **measurements** for the taper point needle, blunt taper point needle, and blunt needle were taken from five samples of the Biogel Indicator underglove, Biogel Super-Sensitive **glove** , Biogel **glove** , Biogel Skinsense N Universal underglove, and Biogel Skinsense Polyisoprene **glove** ; and the Biogel, Biogel Super-Sensitive, and Biogel Skinsense Polyisoprene double- **glove** hole puncture indication systems. The magnitude of puncture resistance **forces** recorded was influenced by several factors: **glove** material, number of **glove** layers, and type of surgical needle. For each type of curved surgical needle, the resistance to needle penetration by the nonlatex **gloves** was significantly greater than those encountered by the latex **glove** materials. The resistance to needle puncture of all three double- **glove** systems was significantly greater than that of either the nonlatex or latex underglove or outer **glove** . The taper point needle encountered the lowest puncture resistance **forces** in the five single **gloves** and the three double- **glove** systems. Blunting the sharp end of the taper point needle markedly increased its resistance to **glove** puncture in the five single **gloves** and five double- **glove** systems. The blunt-point surgical needle elicited the greatest needle penetration **force** in all of the

single and double- glove systems.

Tags: Human

Descriptors: Accidents, Occupational--prevention and control--PC; *
Gloves , Surgical; *Intraoperative Complications--prevention and control
--PC; *Materials Testing; *Needles; *Surgery; *Wounds and Injuries
--prevention and control--PC; Equipment Design; Needlestick Injuries
--prevention and control--PC

Record Date Created: 20030626

Record Date Completed: 20030804

14/9/5 (Item 1 from file: 6)

DIALOG(R) File 6:NTIS

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1815219 NTIS Accession Number: N94-30210/6

**Tactility as a Function of Grasp Force : Effects of Glove ,
Orientation, Pressure, Load, and Handle**

Bishu, R. R. ; Bronkema, L. A. ; Garcia, D. ; Klute, G. ; Rajulu, S.

National Aeronautics and Space Administration, Houston, TX. Lyndon B.
Johnson Space Center.

Corp. Source Codes: 019042004; ND185000

Report No.: NAS 1.60:3474; S-761; NASA-TP-3474

May 94 23p

Languages: English

Journal Announcement: GRAI9418; STAR3208

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Springfield, VA, 22161, USA.

NTIS Prices: PC A03/MF A01

Country of Publication: United States

One of the reasons for reduction in performance when **gloves** are **donned**
is the lack of tactile sensitivity. It was argued that grasping **force**
for a weight to be grasped will be a function of the weight to be lifted
and the hand conditions. It was further reasoned that the differences in
grasping **force** for various hand conditions will be a correlate of the
tactile sensitivity of the corresponding hand conditions. The objective of
this experiment, therefore, was to determine the effects of **glove** type,
pressure, and weight of load on the initial grasping **force** and stable
grasping **force**. It was hypothesized that when a person grasps an object,
he/she grasps very firmly initially and then releases the grasp slightly
after realizing what **force** is needed to maintain a steady grasp. This
would seem to be particularly true when a person is wearing a **glove** and
has lost some tactile sensitivity and **force** feedback during the grasp.
Therefore, the ratio of initial **force** and stable **force** and the stable
force itself would represent the amount of tactile adjustment that is
made when picking up an object, and this adjustment should vary with the
use of **gloves**. A dynamometer was fabricated to measure the grasping
force; the tests were performed inside a **glove** box. Four female and
four male subjects participated in the study, which **measured** the effects
of four variables: load effect, gender effect, **glove** type, and pressure
variance. The only significant effects on the peak and stable **force** were
caused by gender and the weight of the load lifted. Neither **gloves** nor
pressure altered these **forces** when compared to a bare-handed condition,
as was suspected before the test. It is possible that **gloves** facilitate
in holding due to coefficient of friction while they deter in peak grasp
strength.

Descriptors: Astronaut performance; *Extravehicular activity; * **Gloves** ;
*Human factors engineering; *Manual control; *Tactile discrimination;

Coefficient of friction; Loads (**Forces**); Sex; Space suits

Identifiers: NTISNASA

Section Headings: 84GE (Space Technology--General); 95E (Biomedical Technology and Human Factors Engineering--Life Support Systems); 95D (Biomedical Technology and Human Factors Engineering--Human Factors Engineering)

14/9/6 (Item 1 from file: 34)

DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

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04461095 Genuine Article#: TE257 Number of References: 38

Title: **INTERACTION OF SIGNAL WORD AND COLOR ON WARNING LABELS - DIFFERENCES IN PERCEIVED HAZARD AND BEHAVIORAL COMPLIANCE**

Author(s): BRAUN CC; SILVER NC

Corporate Source: UNIV IDAHO,DEPT PSYCHOL/MOSCOW//ID/83844; UNIV NEVADA,DEPT PSYCHOL/LAS VEGAS//NV/89154

Journal: **ERGONOMICS**, 1995, V38, N11 (NOV), P2207-2220

ISSN: 0014-0139

Language: ENGLISH Document Type: ARTICLE

Geographic Location: USA

Subfile: SocSearch; SciSearch; CC ENGI--Current Contents, Engineering, Technology & Applied Sciences; CC SOCS--Current Contents, Social & Behavioral Sciences

Journal Subject Category: **ERGONOMICS**

Abstract: Previous research has examined the connoted hazard of various colour and signal welds separately. The purpose of the present research was to examine the interaction of signal words and colours. Two separate experiments examined the influence of colour on perceptions of hazard and on compliance to printed warnings. In experiment 1, a sample of 30 undergraduates rated the perceived hazard of signal words printed in specific hazard colours. Results indicated that the level of hazard varied as a function of the signal word and the colour in which it was presented. Of the colours used, red conveyed the highest level of perceived hazard followed by orange, black, green and blue. More importantly, it was noted that a signal word such as DEADLY connoted less hazard when printed in green than in red ink. Experiment 2 examined the effect of colour on compliance with printed warnings. Sixty-five undergraduates interacted with a pool-water test kit and a two-part adhesive. The warning on each product was factorial for colour (i.e. red, green and black). Behavioural compliance was **assessed** by indicating if subjects **donned** protective **gloves** as directed by the warning. The data indicated that warnings printed in red resulted in a higher proportion of compliant behaviour than green and black combined. Implications for warning design are discussed.

Descriptors--Author Keywords: **SAFETY ; WARNINGS ; COLORS ; SIGNAL WORDS**

Identifiers--KeyWords Plus: **STRENGTH**

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14/9/7 (Item 1 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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012734452

WPI Acc No: 1999-540569/199945

XRAM Acc No: C99-157864

XRPX Acc No: N99-400661

Powder free glove exhibiting minimal discoloration/stickiness after sterilization by irradiation

Patent Assignee: ALLEGIANCE CORP (ALLE-N); ALLEGIANCE HEALTHCARE CORP (ALLE-N)

Inventor: BOURNE G; MOCERI T A; YEH Y T

Number of Countries: 027 Number of Patents: 009

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9943739	A1	19990902	WO 99US3693	A	19990219	199945	B
AU 9927764	A	19990915	AU 9927764	A	19990219	200004	
EP 979251	A1	20000216	EP 99908302	A	19990219	200014	
			WO 99US3693	A	19990219		
CN 1256702	A	20000614	CN 99800182	A	19990219	200048	
TW 400224	A	20000801	TW 99102830	A	19990225	200109	
US 6195805	B1	20010306	US 9832632	A	19980227	200115	
KR 2001020302	A	20010315	KR 99709906	A	19991026	200157	
JP 2002503138	W	20020129	JP 99543690	A	19990219	200211	
			WO 99US3693	A	19990219		
AU 755975	B	20030102	AU 9927764	A	19990219	200319	

Priority Applications (No Type Date): US 9832632 A 19980227

Patent Details:

Patent No Kind Ian Pg Main IPC Filing Notes

WO 9943739 A1 E 23 C08J-005/02

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Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU
MC NL PT SE

AU 9927764 A Based on patent WO 9943739

EP 979251 A1 E Based on patent WO 9943739

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI
LU MC NL PT SE

CN 1256702 A C08J-005/02

TW 400224 A A61B-019/04

US 6195805 B1 A41D-019/015

KR 2001020302 A C08J-005/02

JP 2002503138 W 22 A61B-019/04 Based on patent WO 9943739

AU 755975 B C08J-005/02 Previous Publ. patent AU 9927764

Based on patent WO 9943739

Abstract (Basic): WO 9943739 A1

NOVELTY - Powder free **glove** exhibiting minimal discoloration/stickiness after sterilization by irradiation is fabricated from neoprene copolymer having specified tensile **strength**, stress, elongation at break and stickiness.

DETAILED DESCRIPTION - A powder free **glove** is fabricated from neoprene copolymer having a tensile **strength** of at least 2500 psi, a stress at 500% no greater than 1015 psi, an elongation to break of at least 650% and a stickiness no greater than 0.2 lbs.

INDEPENDENT CLAIMS are also included for:

(1) a powder-free **glove** formulated from a neoprene copolymer of chloroprene and 2,3-dichlorobutadiene having a tensile stress of at least 2500 psi; and

(2) a process for making the **glove**, the process comprising:

(i) dipping a former into a coagulant dispersion to deposit a coagulant layer on the former;

(ii) dipping the former with the deposited layer into a neoprene copolymer latex formulation to produce a second layer comprising coagulated neoprene on it;

(iii) leaching the former with water;

(iv) dipping the second layer of coagulated neoprene copolymer into a powdered slurry comprised of a surfactant, powder, silicone and water;

(v) curing the layers on the former;

(vi) stripping the **glove** from the former;

(vii) turning the **glove** so that the inner surface of the **glove** is on the exterior of the **glove**;

(viii) chlorinating the **glove** to remove powder;

(ix) rinsing the **glove** with water;

(x) lubricating the **glove**;

(xi) drying the **glove**;

(xii) turning the **glove** so that the inner surface of the **glove** is on the interior of the **glove**; and

(xiii) drying the **glove**.

USE - The **gloves** have medical applications.

ADVANTAGE - The **gloves** comprise hypoallergenic medical **gloves** and can be **donned** easily without the use of powdered **donning** agents and retain puncture resistance, tensile **strength**, stress at 500% and elongation to break after post-processing by chlorination and sterilization by irradiation. The **gloves** also exhibit minimal discoloration and minimal stickiness to packing materials or to themselves.

pp; 23 DwgNo 0/0

Technology Focus:

TECHNOLOGY FOCUS - POLYMERS - Preferred **Glove**: The neoprene copolymer is a copolymer of chloroprene and 2,3-dichloro-1,3-butadiene. The **glove** has a puncture resistance of greater than 2 lbs, the %

change in the yellowness index measured according to ASTM D1925 is no greater than 15%. The neoprene copolymer contains 25-55 (especially 40) wt.% Cl, has a stress at 500% of no greater than 1015 psi and an elongation at break of at least 650%. Preferred Process: The process comprises additional steps after final drying of packing the glove and irradiating with an electron beam. The lubricant is comprised of cetylpyridinium chloride and water or nonionic surfactants and/or ionic surfactants or surfactant and water-soluble polymer combination. The glove is irradiated at a minimum dose to meet SAL of 106.

Extension Abstract:

EXAMPLE - Sterile powder-free gloves were made by first preheating a glove former in an oven at 100-200 degreesF. The former was dipped into alcohol-based coagulant dispersion, comprising 50-70 wt.% methanol, 25-40 wt.% calcium nitrate and 5-15 wt.% calcium carbonate, at less than 110 degreesF. The glove former was dried in air. The former was dipped into compounded neoprene rubber copolymer latex, comprising copolymer of chloroprene and 2,3-dichloro-2,3-butadiene, maintained at 70-85 degreesF. The former was leached for 5-8 minutes in water at 100-150 degreesF, dipped into powder slurry comprising 0.02-0.1 wt.% stabilizers, 10-20 wt.% crosslinked corn starch powders, 0.5-1.5 wt.% silicone and water and optionally wetting and antimicrobial agents. The gloves were beaded using a beader and cured while on the former at 330 degreesF for 20-30 minutes. The gloves were cooled and stripped from the former. The powdered gloves were subjected to post-processing treatment comprising turning the gloves inside out, chlorination, neutralization, rinsing, lubrication and drying to produce powder-free gloves.

Title Terms: POWDER; FREE; GLOVE ; EXHIBIT; MINIMUM; DISCOLOUR; STICKY; AFTER; STERILE; IRRADIATE

Derwent Class: A12; A83; A96; D22; E13; H07; P21; P31; P32; P34

International Patent Class (Main): A41D-019/015; A61B-019/04; C08J-005/02

International Patent Class (Additional): A41D-019/00; A41D-019/04;

A61F-013/10; A61L-002/08; A61L-031/00; C08J-005/18; C08L-011/00;

C08L-011/02; C08L-011-00

File Segment: CPI; EngPI

Manual Codes (CPI/A-N): A04-B08; A12-C02A; A12-V03D; D09-C04D; E07-D04A; H07-X

Chemical Fragment Codes (M3):

01 H6 H602 H683 H7 H724 M210 M214 M231 M250 M281 M320 M416 M424 M740 M782 M904 M905 N105 Q120 Q130 R01079-K R01079-M
02 A220 A940 C108 C307 C510 C730 C801 C802 C803 C804 C807 M411 M424 M740 M782 M904 M905 M910 N105 Q120 Q130 R01905-K R01905-M
03 A220 A940 C106 C108 C530 C730 C801 C802 C803 C805 C807 M411 M424 M740 M782 M904 M905 M910 N105 Q120 Q130 R01278-K R01278-M R05243-K R05243-M
04 H4 H401 H481 H8 M210 M211 M272 M281 M320 M416 M424 M620 M740 M782 M904 M905 M910 N105 Q120 Q130 R00270-K R00270-M
05 H6 H602 H608 H683 H689 H7 H724 M280 M314 M321 M331 M342 M363 M391 M416 M424 M740 M782 M904 M905 N105 Q120 Q130 R20388-K R20388-M

Polymer Indexing (PS):

<01>

001 018; H0022 H0011; R01079 G0828 G0817 D01 D12 D10 D51 D54 D56 D58 D69 D84 Cl 7A; G0839 G0828 G0817 D01 D12 D10 D51 D54 D56 D58 D69 D84 Cl 7A; H0124-R; S9999 S1025 S1014; P0328
002 018; ND01; Q9999 Q7078 Q7056; B9999 B5323 B5298 B5276; N9999 N6871 N6655; K9790-R; B9999 B4171 B4091 B3838 B3747; B9999 B3907 B3838 B3747; B9999 B4273 B4240; ND07; N9999 N6473 N6440; N9999 N7318 N6655; K9723; N9999 N6699 N6655; N9999 N6882 N6655; N9999 N6780-R N6655; N9999 N6279 N6268; N9999 N6337-R; B9999 B4182 B4091 B3838

B3747; K9814 K9803 K9790
003 018; D01 D11 D10 D23 D22 D31 D76 D41 D50 D94 F16 D61-R Cl 7A; A999
A340-R
Derwent Registry Numbers: 0270-U; 1079-U; 1278-U; 1905-U
Specific Compound Numbers: R01079-K; R01079-M; R01905-K; R01905-M; R01278-K
; R01278-M; R05243-K; R05243-M; R00270-K; R00270-M; R20388-K; R20388-M
Key Word Indexing Terms:
01 140524-0-0-0-CL 3847-0-0-0-CL 89827-0-0-0-CL 15-0-0-0-CL
57648-0-0-0-CL

14/9/8 (Item 2 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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009849227 **Image available**
WPI Acc No: 1994-129083/199416
XRAM Acc No: C94-059583
XRPX Acc No: N94-101281

Device for donning gloves for handling radioactive material - has
solenoid valve operated suction device connected to suction hole at
bottom of container with hole at top for fitting glove and inserting
hand

Patent Assignee: DORYOKURO KAKUNENRYO KAIHATSU (DORY)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 6075092	A	19940318	JP 92225902	A	19920825	199416 B

Priority Applications (No Type Date): JP 92225902 A 19920825

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 6075092	A		3	G21F-003/035	

Abstract (Basic): JP 6075092 A

Device cylindrical and transparent glove donning container
having upper end opening for donning glove . A suction device is
connected to the suction hole at the bottom of the container. A
solenoid valve operates interlocking with the suction device and a
switch operates the suction device and the solenoid valve. A pressure
gauge is provided for detection of pressure change in the container.

USE/ADVANTAGE - The device is used for fitting gloves for
handling radioactive material in nuclear power plant, etc. The device
can avoid contamination of gloves from using ones. In medical use, a
doctor can equip himself without aid of assistant without
contamination.

Dwg.2/2

Title Terms: DEVICE; DONNING ; GLOVE ; HANDLE; RADIOACTIVE; MATERIAL;
SOLENOID; VALVE; OPERATE; SUCTION; DEVICE; CONNECT; SUCTION; HOLE; BOTTOM
; CONTAINER; HOLE; TOP; FIT; GLOVE ; INSERT; HAND

Derwent Class: K07; P31

International Patent Class (Main): G21F-003/035

International Patent Class (Additional): A61B-019/04; G21F-007/053

File Segment: CPI; EngPI

Manual Codes (CPI/A-N): K07-A

14/9/9 (Item 3 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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008913332 **Image available**

WPI Acc No: 1992-040601/199205

XRPX Acc No: N92-031245

Device to apply elastic gloves - has cylinders which hold elastic gloves and form air tight seal

Patent Assignee: SULLIVAN J L (SULL-I)

Inventor: SULLIVAN J L

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5078308	A	19920107	US 91656793	A	19910219	199205 B

Priority Applications (No Type Date): US 91656793 A 19910219

Abstract (Basic): US 5078308 A

The device may be mounted to any flat surface. **Glove donning** cylinders (100) hold elastic **gloves** securely in place and form an air tight seal between cylinder and elastic **glove** . When a hand is inserted into the cylinder, sealed with an elastic **glove** , air in the cylinder is **forced** out through a one-way check valve (400). When the hand is retracted slightly or fully, the elastic **glove** is pulled into the cylinder by the vacuum developed below the **glove** to expand larger than a hand.

The user may then insert a hand friction free and disengages the **glove** from the cylinder by rolling the cuff up and off the upper edge (130) of the cylinder. When the air tight seal is broken, the **glove** deflates rapidly and conforms to the shape of the hand with no air pockets at the finger tips. If the vacuum indicator (500) indicates a loss of vacuum in the cylinder, the **glove** may have a hole through which bodily fluids can pass.

USE - To inflate and **detect** pinhole size leaks in elastic **gloves** using no internal or external **energy** sources. (9pp
Dwg.No.4/4)

Title Terms: DEVICE; APPLY; ELASTIC; **GLOVE** ; CYLINDER; HOLD; ELASTIC; **GLOVE** ; FORM; AIR; TIGHT; SEAL

Derwent Class: P27

International Patent Class (Main): A47G-025/90

File Segment: EngPI

14/9/10 (Item 4 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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003782261

WPI Acc No: 1983-778488/198340

XRAM Acc No: C83-095073

XRPX Acc No: N83-174764

Flexible surgical glove - made from soft low modulus non crystalline segmented polyurethane

Patent Assignee: DESERET MED INC (DESR); WARNER-LAMBERT CO (WARN);
DESERET MEDICAL INC (DESE-N)

Inventor: MCGARY C W; PASCARELLA V J; RHODES D R; TALLER R A

Number of Countries: 006 Number of Patents: 008

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 89780	A	19830928	EP 83301284	A	19830309	198340 B
JP 58165836	A	19830930				198345
US 4463156	A	19840731	US 82357912	A	19820315	198433

CA 1193788 A 19850917 198542
 EP 89780 B 19880525 198821
 DE 3376733 G 19880630 198827
 JP 92014125 B 19920311 JP 8341608 A 19830315 199214
 EP 89780 B2 19940615 EP 83301284 A 19830309 199423
 Priority Applications (No Type Date): US 82357912 A 19820315
 Cited Patents: BE 624888; CH 452888; EP 4116; GB 993339; No-SR.Pub;
 01Jnl.Ref

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 89780	A	E	41		
Designated States (Regional): DE FR GB					
EP 89780	B	E			
Designated States (Regional): DE FR GB					
JP 92014125	B		14		
EP 89780	B2	E	20	A61B-019/04	
Designated States (Regional): DE FR GB					

Abstract (Basic): EP 89780 A

Flexible **glove** for use by surgeons and others is formed from a polyurethane having a 100% modulus of less than ca. 250 psi, initial tensile set less than ca. 30% and a tensile **strength** of 3500-6500 psi.

The polyurethane is pref. a segmented polyurethane in which the percentage of hard segment is 14-25% and the degree of crosslinking is ca. 5000-30,000 Mc. The polyurethane is esp a reaction prod. of an aromatic or alicyclic diisocyanate, a short chain diol extender, a 500-5000 mol wt. long chain diol and polyhydroxy cross linking agent. The prod. pref. contains 13-23% of polyisocyanate chosen from, 4,4'-diphenylmethane diisocyanate, TDI, isophorone diisocyanate and methylene bis(4-cyclohexyl isocyanate); 0.5-3.0% of a short chain diol extender contg. up to 6C; and a long chain diol comprising a polyester diol or mixt. of these chosen from poly(ethylene adipate)diol, polycaprolactone diol or a blend of these. The inside surface of the **glove** intended to be worn against the skin may contain an embedded solid lubricant.

The **gloves** are easily **donned** and comfortable to wear, and do not contain additives likely to cause dermatitis or allergic reactions.

Abstract (Equivalent): EP 89780 B

A flexible **glove** suitable for use by surgeons and others, wherein the **glove** is formed of a material which comprises a polyurethane having a 100% modulus less than approximately 17.6 kg/cm² (250 psi), initial tensile set less than approximately 30% and tensile **strength** of approximately from 246 to 457 kg/cm² (3500 to 6500 psi), **measurements** being made in accordance with ASTM 0412-68. (18pp)

Abstract (Equivalent): US 4463156 A

Non-crystalline segmented polyurethane with a 100% modulus less than about 250 psi, initial tensile set less than about 30%, and tensile **strength** about 3500-6500 psi is obtd. by balancing the hard segment content and the degree of cross linking (14-25 wt.% hard segment material, Mr 5,000-30,000 per crosslink). Pref. polyurethane is obtd. from aromatic or alicyclic diisocyanates, short chain diol extenders, a long chain diol (Mr 500-5000) and a polyol crosslinking agent.

USE - The prods. are used to mfr. soft, flexible **gloves** for surgical use. (11pp)e

Title Terms: FLEXIBLE; SURGICAL; **GLOVE** ; MADE; SOFT; LOW; MODULUS; NON; CRYSTAL; SEGMENT; POLYURETHANE

Derwent Class: A25; A96; P21; P31

International Patent Class (Main): A61B-019/04

International Patent Class (Additional): A41D-019/00; C08G-018/65;

C08G-018/72; C08G-022/10; C08G-053/08

File Segment: CPI; EngPI

Manual Codes (CPI/A-N): A05-G01C; A12-C02; A12-V03

Plasdoc Codes (KS): 0004 0006 0009 0013 0037 0205 0222 0151 0231 1294 1296

1297 1300 3185 3187 1306 1319 1321 1323 1325 1327 1329 1343 1450 1762

1764 1766 3134 1772 3132 1774 3148 2020 2041 2064 2148 2152 2315 2578

2585 2620 2622 2628 2634 2635 2640 3253 2670 2675 3255 3256 2714 2768

Polymer Fragment Codes (PF):

001 013 028 029 032 038 04- 05- 075 08& 15& 150 155 157 160 163 169 17&

170 171 172 173 174 175 177 195 200 207 208 209 210 211 212 229 231

239 240 262 292 311 314 333 344 346 351 38- 40- 473 50& 504 525 53&

54& 540 55& 551 557 559 56& 560 561 566 567 57& 572 573 575 577 58&

583 589 59& 597 600 619 62- 621 643 645 689 726

14/9/11 (Item 1 from file: 144)

DIALOG(R) File 144:Pascal

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12822260 PASCAL No.: 97-0038815

Ease of donning commercially available powder-free surgical gloves

FISHER M D; NEAL J G; KHEIR J N; WOODS J A; THACKER J G; EDLICH R F

Department of Plastic Surgery, University of Virginia School of Medicine, Charlottesville, Virginia, United States; Department of Mechanical and Aerospace Engineering, University of Virginia, Charlottesville, Virginia, United States; Department of Biomedical Engineering, University of Virginia School of Medicine, Charlottesville, Virginia, United States

Journal: Journal of biomedical materials research, 1996, 33 (4) 291-295

ISSN: 0021-9304 CODEN: JBMRBG Availability: INIST-13764;

354000060998580090

No. of Refs.: 6 ref.

Document Type: P (Serial) ; A (Analytic)

Country of Publication: United States

Language: English

There are a wide variety of powder-free gloves that can now be used by surgeons. The purpose of this study was to quantify the forces required to don these powder-free surgical gloves. The lowest donning forces for wet hands was encountered with powder-free gloves coated with a hydrogel polymer. In addition, the hydrogel coated gloves exhibited the least increase in donning forces from dry hands to wet hands. While greater forces were encountered with the other commercially available powder-free gloves than the hydrogel coated gloves, they all could be safely donned on dry hands without tearing.

English Descriptors: Quantitative analysis; Force measurement ; Glove ; Surgical equipment; Hydrogel; Polymer; Coated material; Lubricant; Starch ; Comparative study; Experimental design; Clinical trial

French Descriptors: Analyse quantitative; Mesure force ; Gant; Equipement chirurgical; Hydrogel; Polymere; Materiau revetu; Lubrifiant; Amidon; Etude comparative; Plan experience; Essai clinique

Classification Codes: 002B26N

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14/9/12 (Item 1 from file: 95)

DIALOG(R)File 95:TEME-Technology & Management
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01363098 19991104915

Biomechanical performance of examination gloves

(Biomechanische Leistung von Untersuchungshandschuhen aus Latex, Nitril oder PVC)

Jackson, EM; Williams, FM; Neal, JG; Suber, F; Thacker, JG; Edlich, RF
Univ. of Virginia, Charlottesville, USA

Journal of Biomedical Materials Research, v48, n4, pp572-577, 1999

Document type: journal article Language: English

Record type: Abstract

ISSN: 0021-9304

ABSTRACT:

The purpose of the study was to compare the biomechanical performance of new powder-free commercially available synthetic examination gloves to that of commercially available powder-free latex examination gloves. The synthetic gloves were significantly thinner than the latex gloves.

Despite the decreased thickness, all three nitrile gloves, as well as the polyvinylchloride glove, exhibited a greater resistance to glove puncture. The glove donning forces varied considerably among all gloves, and wet donning forces were greater than dry donning forces. Under dry conditions, the donning forces for the synthetic gloves were less than or equal to the forces for the latex gloves. Because of their increased puncture resistance and similar donning forces, synthetic gloves are a safe alternative to latex examination gloves.

DESCRIPTORS: PROTECTIVE GLOVE; POLY VINYL CHLORIDE; NITRILE; PUNCTURE RESISTANCE; TEST DEVICES; THICKNESS MEASUREMENT; BIOCOMPATIBLE MATERIALS; BIOMECHANICS

IDENTIFIERS: DISK CRIMINATOR; Untersuchungs-Handschuh; Biomechanik; Latex-Handschuh

14/9/13 (Item 2 from file: 95)

DIALOG(R)File 95:TEME-Technology & Management
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01336865 F99080022982

Biomechanical performance fo orthopedic gloves

(Biomechanische Leistung orthopaedischer Handschuhe)

Jackson, EM; Neal, JG; Williams, FM; Stern, CA; Suber, F; Thacker, JG; Edlich, RF

Univ. of Virginia School of Medicine, Charlotttsville, USA

Journal of Biomedical Materials Research, v48, n2, pp193-198, 1999

Document type: journal article Language: English

Record type: Abstract

ISSN: 0021-9304

ABSTRACT:

The purpose of the study was to compare the biomechanical performance of commercially available orthopedic gloves to that of a single surgical glove, as well as a double glove system. The orthopedic gloves were found to be thicker than the single surgical glove. This increased thickness of the orthopedic glove was associated with a greater resistance to glove puncture. The thickest orthopedic gloves also had reduced tactile sensitivity when compared to the single surgical glove. In addition, the glove donning forces and glove hydration rates varied considerably. These latter biomechanical performance parameters were

not significantly related to **glove** thickness. The double **glove** system tested in the study had similar performance characteristics in regard to many of the orthopedic **gloves** . The **glove donning forces** for the double **glove** systems were the lowest of the **gloves** tested. In addition, the double **glove** systems displayed the greatest resistance to **glove** hydration of the **gloves** tested. Their performance in the **glove** hydration tests and the **force** required to don the double **glove** systems were much more desirable than any of the orthopedic **gloves** . The results of the study indicate that the double **glove** systems may provide a desirable alternative to the use of the single orthopedic **gloves** .

DESCRIPTORS: BIOMECHANICS; WATER CONTENT; SURGERY; CRACKING--FRACTURING; THICKNESS; TEST DEVICES; PULL **STRENGTH** ; **FORCE MEASUREMENT**
IDENTIFIERS: HANDSCHUH--(ORTHOPAEDIE); LATEX HANDSCHUH; TASTVERMOEGEN; DRUCK AESTHESIOMETER; FLUID ALARM SYSTEM; DISK CRIMINATOR; Handschuh (Orthopaedie); Biomechanik; Rissfestigkeit

14/9/14 (Item 3 from file: 95)

DIALOG(R) File 95:TEME-Technology & Management
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01291225 F99030076982

Ease of donning commercially available latex examination gloves
(Leichtigkeit, mit der kommerziell verfügbare Latexhandschuhe anzuziehen sind)

Cote, SJ; Fisher, MD; Kheir, JN; Paull, RB; Neal, JG; Jackson, EM; Suber, F ; Thacker, JG; O'Keefe, JS; Edlich, RF
Univ. of Virginia, Charlottesville, USA

Journal of Biomedical Materials Research, v43, n3, pp331-337, 1998

Document type: journal article Language: English

Record type: Abstract

ISSN: 0021-9304

ABSTRACT:

There are a wide variety of latex examination **gloves** now available for use by health care providers. A prospective randomized trial was completed to quantify the **forces** required to don a sample of seven cornstarch-lubricated **gloves** and 13 powder-free latex examination **gloves** . The data collected was analyzed by a 20 x 2 general factorial ANOVA, as well as two 1-way ANOVAs using a least significance difference post hoc test. Some powder-free **gloves** can be easily **donned** with dry or wet hands without tearing with **forces** comparable to those encountered with powdered **gloves** . With the advent of these powder-free examination **gloves** , powdered **gloves** can now be abandoned, protecting health professionals and patients from the dangers of absorbable dusting powders. Despite the dangers of the absorbable dusting powders and the Food and Drug Administration's requirement for labeling examination **glove** boxes, some manufacturers of powdered examination **gloves** do not appropriately label their boxes with a warning to the health professional and patient of the presence of powder.

DESCRIPTORS: SLIDING MATERIALS; **FORCE MEASUREMENT** ; PROTECTIVE CLOTHING; HEALTH CARE; CORN STARCH

IDENTIFIERS: LATEXHANDSCHUHE; PUDER; PUDERFREIE HANDSCHUHE; KLEINSTE SIGNIFIKANTE DIFFERENZEN; Untersuchungshandschuh; Latex; Puder; Kraftmessung

?

7/9/2 (Item 2 from file: 2)

DIALOG(R) File 2:INSPEC

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4577312 INSPEC Abstract Number: B9402-8380-008, C9402-3250-004

Title: Utilization of stepping motors in the realization of a prototype of perceptive glove with feedback force for telerobotics

Author(s): Milanesi, S.; Rovetta, A.; Sala, R.; Togno, A.; Wen, X.

Author Affiliation: Dept. of Mech., Politecnico of Milano, Italy

Conference Title: ISIE'93 - Budapest. IEEE International Symposium on Industrial Electronics. Conference Proceedings (Cat.No.93TH0540-5) p. 634-7

Publisher: IEEE, New York, NY, USA

Publication Date: 1993 Country of Publication: USA 794 pp.

ISBN: 0 7803 1227 9

U.S. Copyright Clearance Center Code: 0 7803 1227 9/93/\$3.00

Conference Sponsor: IEEE; EPRI; Hungarian Electrotech. Assoc.; Hungarian Acad. Sci.; et al

Conference Date: 1-3 June 1993 Conference Location: Budapest, Hungary

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: Force feedback is a basic element in realizations for telemanipulation and virtual reality. In telemanipulation, tactile but especially force information permits the remote operator to carry out efficiently operations which would otherwise be difficult to perform; nevertheless it permits a better simulation and interaction of virtual environment in the case of virtual reality. A system for grasping objects was projected and realized in a robotics laboratory. The operator wearing a glove drives a mechanical hand, having a force sensor on his own hand. This increases the performance of the telemanipulation system. The whole project is explained with particular attention to the control system of stepping motors used for force feedback. (6 Refs)

Subfile: B C

Descriptors: data gloves; electric control equipment; feedback; force control; robots; stepping motors; telecontrol; virtual reality

Identifiers: force control; stepping motors; perceptive glove; telerobotics; telemanipulation; virtual reality; laboratory; performance; project; force feedback

Class Codes: B8380 (Control gear and apparatus); B8340 (Small and special purpose electric machines); C3250 (Telecontrol and telemetering components); C3120F (Force, torque and work); C3390 (Robotics); C3260B (Electric equipment); C5540B (Interactive-input devices); C7420 (Control engineering)

7/9/4 (Item 1 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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10495334 PMID: 10595890

Biomechanical performance of powder-free examination gloves.

Fisher M D; Reddy V R; Williams F M; Lin K Y; Thacker J G; Edlich R F

Department of Plastic Surgery, University of Virginia School of Medicine, Charlottesville 22908, USA.

Journal of emergency medicine (UNITED STATES) Nov-Dec 1999, 17 (6)

p1011-8, ISSN 0736-4679 Journal Code: 8412174

Document type: Clinical Trial; Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Subfile: INDEX MEDICUS

Biomechanical performance studies were undertaken for powder-free, latex and nitrile examination gloves. Using standardized tests, examination glove performance was judged by measuring glove thickness, glove puncture force, glove tape adhesion force, glove donning force, glove stiffness, and immediate unrecovered stretch. Even though the nitrile examination gloves were thinner than the latex examination gloves, they exhibited a greater puncture resistance. In addition, tape adherence to the N-Dex nitrile glove was the lowest. Moreover, measurements of the handling characteristics of the nitrile examination gloves demonstrated that they are an acceptable alternative to latex examination gloves. While these biomechanical studies demonstrate the superiority of the nitrile examination gloves, clinical glove evaluation is still needed to determine their performance in the health care setting.

Tags: Comparative Study; Human

Descriptors: *Emergency Medical Technicians; *Gloves, Protective; Biomechanics; Evaluation Studies; Gloves, Protective--standards--ST; Latex; Nitriles

CAS Registry No.: 0 (Latex); 0 (Nitriles)

Record Date Created: 19991223

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7/9/5 (Item 1 from file: 94)

DIALOG(R) File 94:JICST-EPlus

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01606578 JICST ACCESSION NUMBER: 93A0010265 FILE SEGMENT: JICST-E

Development of hand operation force display.

SATO SHIGERU (1); SANO YOSHIMASA (1); KIKUCHI SUEHIKO (1); SHIMOJO MAKOTO (1); SAITO ICHIRO (1)

(1) Industrial Products Res. Inst.

Ningen Kogaku(Japanese Journal of Ergonomics), 1992, VOL.28,NO.5,

PAGE.251-257, FIG.12, TBL.1, REF.11

JOURNAL NUMBER: S0258AAF ISSN NO: 0549-4974

UNIVERSAL DECIMAL CLASSIFICATION: 681.52

LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan

DOCUMENT TYPE: Journal

ARTICLE TYPE: Original paper

MEDIA TYPE: Printed Publication

ABSTRACT: A measuring system of hand operation force distribution has been developed. There was not any equipment for this purpose that is suitable for wide use. This system has glove type sensors which can be put on the hands as gloves. The force distribution data are shown on CRT display of personal computer as a color graphics. The system includes three parts. The first is the glove type sensor, the second is scanning circuit, and the third is personal computer as controller. The glove type sensor is constructed with pressure sensitive conductive rubber sheets and flexible print circuit. There are 81 force sensors in each hand, and they are connected in 7*15 array of matrix. Using this system, force distribution pattern of human hand operation can be observed. (author abst.)

DESCRIPTORS: finger(body region); operation(processing); sensor;

load(weight); measuring instrument; human engineering; distribution

BROADER DESCRIPTORS: hand(body region); arm(foot); extremity; body region; instrumentation element; engineering

CLASSIFICATION CODE(S): IB01000S

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18/9/9 (Item 1 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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013121114 **Image available**
WPI Acc No: 2000-292985/200025
XRAM Acc No: C00-088518
XRPX Acc No: N00-219722

Testing forces experienced by wearer when donning stocking involves
measuring force in advancing geometric body and extension of stocking
secured to support and inserted with tension testing head

Patent Assignee: BEIERSDORF-JOBST INC (BEIE)
Inventor: LOVELESS J D; TUCKER D M; YAKOPSON S M; TUCKER K M
Number of Countries: 021 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200018344	A1	20000406	WO 99US21676	A	19990917	200025 B
AU 9964989	A	20000417	AU 9964989	A	19990917	200035
EP 1115359	A1	20010718	EP 99952937	A	19990917	200142
			WO 99US21676	A	19990917	
AU 750610	B	20020725	AU 9964989	A	19990917	200260
US 6578433	B1	20030617	US 98101700	P	19980925	200341
			WO 99US21676	A	19990917	
			US 2001787598	A	20010320	
EP 1115359	B1	20030604	EP 99952937	A	19990917	200344
			WO 99US21676	A	19990917	
DE 69908617	E	20030710	DE 608617	A	19990917	200353
			EP 99952937	A	19990917	
			WO 99US21676	A	19990917	

Priority Applications (No Type Date): US 98101700 P 19980925; US 2001787598
A 20010320

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200018344	A1	E	18	A61F-013/08	
				Designated States (National):	AU US
				Designated States (Regional):	AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
AU 9964989	A				Based on patent WO 200018344
EP 1115359	A1	E		A61F-013/08	Based on patent WO 200018344
				Designated States (Regional):	AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
AU 750610	B			A61F-013/08	Previous Publ. patent AU 9964989
					Based on patent WO 200018344
US 6578433	B1			G01N-003/08	Provisional application US 98101700
					Based on patent WO 200018344
EP 1115359	B1	E		A61F-013/08	Based on patent WO 200018344
				Designated States (Regional):	AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
DE 69908617	E			A61F-013/08	Based on patent EP 1115359
					Based on patent WO 200018344

Abstract (Basic): WO 200018344 A1

NOVELTY - Testing the forces experienced by a wearer when donning a stocking includes (a) securing an end of the stocking to a support; (b) inserting a tension testing head (15) within the stocking; (c) passing a geometric body of the head through the interior of the stocking; and (d) measuring the force used to advanced the geometric body and the extension of the stocking.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a

device used in testing the forces experienced by a wearer when **donning** a stocking (10). The device includes (a) a stocking support or a pin bar (11) to secure one end of the stocking; (b) a geometric body (16) attached to a rod (17) adapted to be pulled or pushed through the stocking; (c) a drive mechanism (18) to move the geometric body through the stocking; and (d) a tension measuring and recording device (20).

USE - The invention is used for testing the forces experienced by a wearer when **donning** a stocking. It is particularly used for simulating and measuring frictional and compressive forces that a patient would experience when **donning** a stocking.

ADVANTAGE - The invention provides valuable information which can be used in the design and comparison of products such as effects on donnability of various softeners and finishes, fiber selection, knit structure selection, and type of yarns and fibers to be used. The manufacturer can obtain concrete data with respect to whether a particular product is easier to don than the other. The effects of modifications to a product on the **donning** curve can also be readily evaluated.

DESCRIPTION OF DRAWING(S) - The figure shows a testing device.

Stocking (10)

Stocking support or pin bar (11)

Tension testing head (15)

Geometric body (16)

Rod (17)

Drive mechanism (18)

Tension measuring and recording device (20)

pp; 18 DwgNo 1/4

Technology Focus:

TECHNOLOGY FOCUS - MECHANICAL ENGINEERING - Preferred Method: The advancing step includes pushing and pulling the geometric body through the stocking or pulling the stocking over the geometric body. The method also includes recording the force used to advance the geometric body and the extension of the stocking. The geometric body is shaped to simulate a portion of a human foot.

Title Terms: TEST; FORCE; EXPERIENCE; WEAR; **DONNING**; STOCKING; MEASURE; FORCE; ADVANCE; GEOMETRY; BODY; EXTEND; STOCKING; SECURE; SUPPORT; INSERT; TENSION; TEST; HEAD

Derwent Class: D22; F07; P32; S02

International Patent Class (Main): A61F-013/08; G01N-003/08

International Patent Class (Additional): G01L-005/00; G01M-019/00

File Segment: CPI; EPI; EngPI

Manual Codes (CPI/A-N): D09-C04B; F03-K02; F04-C02; F04-E04

Manual Codes (EPI/S-X): S02-F03; S02-J09

18/9/10 (Item 1 from file: 95)

DIALOG(R) File 95:TEME-Technology & Management

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01373537 20000102154

Biomechanical performance of latex and non-latex double-glove systems

(Ergebnisse biomechanischer Untersuchungen von Latex-freien Doppelhandschuhen und solchen aus Latex)

Fisher, MD; Reddy, VR; Williams, FM; Lin, KY; Thacker, JG; Edlich, RF
Univ. of Virginia School of Medicine, Charlottesville, USA; Univ. of Virginia, Charlottesville, USA

Journal of Biomedical Materials Research, v48, n6, pp797-806, 1999

Document type: journal article Language: English

Record type: Abstract

ISSN: 0021-9304

ABSTRACT:

The purpose of the study was to evaluate ten commercially available latex, powder-free surgical gloves and four commercially available non-latex, powder-free surgical gloves using standardized, reproducible biomechanical parameters that included glove thickness, puncture resistance, and glove **donning** force. For all gloves tested, with one exception (Neolon PF), puncture resistance increased for double-gloves as compared to single-gloves. In addition, single-gloves thickness was not a reliable determinant of puncture resistance for either latex or non-latex gloves.

For the latex gloves, the Ultrafree double and single-gloves exhibited the highest puncture resistance. The glove **donning** forces for the Biogel M and Biogel Sensor single-gloves were the lowest. In contrast, the Biogel reveal and Encore Ultra-thick exhibited the lowest double-glove **donning** forces. On the basis of these performance tests of latex gloves, the surgeon should consider the Biogel Reveal as well as the Ultrafree gloves for their latex double-glove system. For the non-latex gloves, the Pure Advantage Nitrile glove had the highest puncture resistance for one layer and two layers of glove material. The thin Pure Advanatge Nitrile glove had low glove **donning** forces for both single-glove **donning** configurations and both double-glove **donning** configurations. Consequently, the authors recommend the Pure Advantage Nitrile glove as the powder-free, non-latex, double-glove system.

DESCRIPTORS: PROTECTIVE GLOVE; BIOMECHANICS; BIOCOMPATIBLE MATERIALS; PUNCTURE RESISTANCE; SURGEON S GOWN; **FORCE MEASUREMENT**
IDENTIFIERS: Chirugenhandschuh; Biomechanik; Latex; Perforierwiderstand
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